watershed focus

New Jersey Department of Environmental Protection · Division of Watershed Management

what's in focus

Summer 2006

❶ Swartswood Lake NPS Improvement Projects
Intra-agency cooperation to yield improved water quality

❸ Point System for Non-Structural BMPs
Available on the web

❹ 46 Pathogen TMDLs Established
Coastal shellfish impairments assessed

❺ Environmental Excellence Awards
Nominations due September 22

❻ Warinanco Park Lake Restoration
Buffers in Union County

❼ Watershed Ambassador Partnership Projects
From plastics to paddles to plantings

⓫ New Riparian Buffers For Northwest New Jersey
Nine projects completed in 2006

⓬ Public Service Awards for DWM Staff
TMDL Team and Volunteer Monitoring Coordinator Recognized

⓭ Volunteer Monitoring Summit
November 2 & 3 at Monmouth University

⓭ Clean Water Council Hearing on WQMPs
October 10 at DEP Headquarters

⓮ South Branch Trains Volunteers
Macroinvertebrates in the rain

⓯ Students of the South Branch
700 visit the river

⓰ Fall Volunteer Monitoring Training Opportunities
Rapid Bioassessment & Study Design

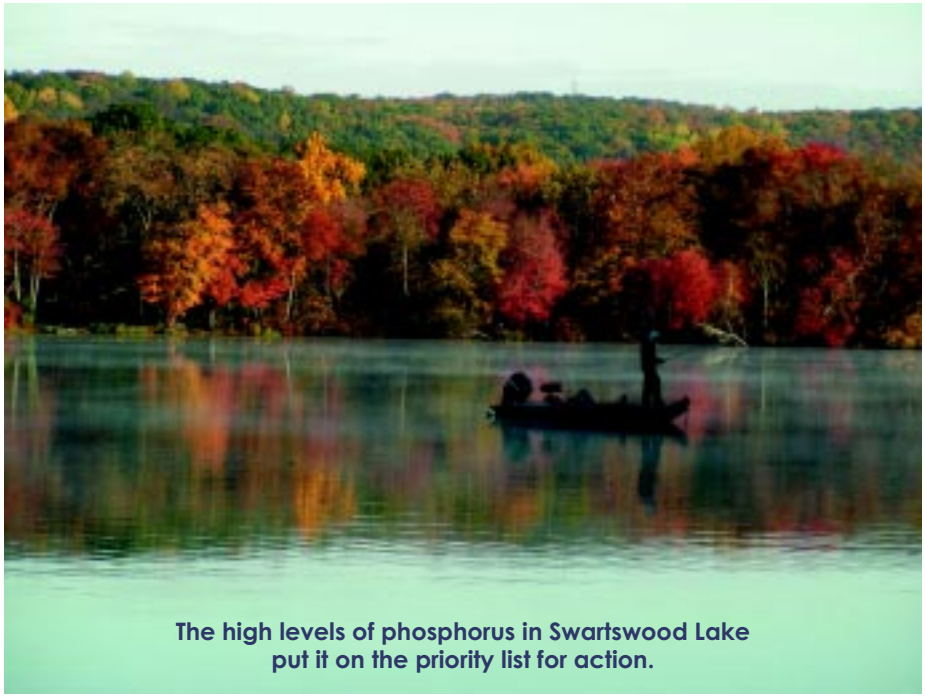
Swartswood Lake Benefits From Intra-Agency Cooperation

By DANA CARTWRIGHT, NJDEP Division of Watershed Management

The Division of Watershed Management has taken its goal to protect, enhance and restore the waters of the state to a new level. In an effort to promote intra-agency cooperation, the DWM Bureau of Watershed Planning is setting a precedent with the Division of Parks and Forestry, the Bureau of Freshwater and Biological Monitoring, and the Office of Quality Assurance by providing intra-agency funding for water quality improvement projects in state parks. Swartswood State Park, located in Sussex County, is this year's grant recipient for the implementation of Best Management Practices aimed at reducing nonpoint source pollution.

"We are pleased to be moving forward with this project, thanks to the Division of Watershed Management and its interest in funding projects to address water quality issues in public lakes managed by the Division of Parks and Forestry. The partnership between the Divisions will not only help to improve the water quality in Swartswood Lake and lakes statewide, but also the recreational experience for the millions of people that visit our parks every year," said Blanca Chevrestt, Swartswood State Park Superintendent.

(***SWARTSWOOD LAKE*** *continued on page 2)*



The high levels of phosphorus in Swartswood Lake put it on the priority list for action.

watershed focus

is a publication concentrating on watershed management, stormwater and nonpoint source pollution management issues in New Jersey. Send comments and subscription requests to:

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what's a watershed?

A watershed is the area of land that drains into a body of water such as a river, lake, stream or bay. It is separated from other systems by high points in the area such as hills or slopes. It includes not only the waterway itself but also the entire land area that drains to it. For example, the watershed of a lake would include not only the streams entering the lake but also the land area that drains into those streams and eventually the lake. Drainage basins generally refer to large watersheds that encompass the watersheds of many smaller rivers and streams.

Swartswood Lake

(continued from page 1)

Working with staff from the Division of Parks and Forestry, the Bureau of Watershed Planning coordinated efforts to identify locations within our state's natural areas in need of improvements. The goal to seek projects that would also influence water quality was realized at Swartswood.

The high levels of phosphorus in Swartswood Lake put it on the priority list for action. The DEP had already proposed a Total Maximum Daily Load that evaluated the excess phosphorus in Swartswood Lake in May 2005. Phosphorus is a vital nutrient for aquatic plants and algae. However, in excess it can cause an overabundance of plant growth that may lead to plant decay and oxygen consumption. This process, known as eutrophication, can lead to fish kills and a decrease in the ecological health of a water body. Stormwater can be a large contributor of excess phosphorus and other pollutants in our lakes and streams.

In response to the TMDL, the divisions are both providing funding to address stormwater runoff from the public parking area. Bioinfiltration basins will be installed and impervious surface reduced in order to prevent high levels of phosphorus and other pollutants from entering the lake as runoff after rain events. The bioinfiltration traffic islands are designed to replicate the natural hydrologic cycle and will allow for infiltration, evaporation, and transpiration to occur after rain events. By preventing rainwater from flowing directly off of the parking area into the lake without treatment, phosphorus, oils, and other debris will be kept out of the lake thus leading to improved water quality and fewer algae blooms.

In addition, stormwater will be sampled prior to and after installation of the parking area improvements following guidance offered by Marc Ferko of the Office of Quality Assurance and Joe Specht from the Bureau of Freshwater and Biological Monitoring. Ferko and Specht spent a day at Swartswood in advance of the start of the project to provide training in stormwater sampling protocol and quality control, and will provide guidance for the duration of the project to ensure that data collected will be sufficient quality for analysis. Chevrestt will be the first Parks and Forestry staff member in the state to become certified to sample for the necessary parameters.

Left: Swartswood Lake. Right: Mark Ferko, Blanca Chevrestt and Dana Cartwright work together to come up with a sampling plan for the project. The bioinfiltration islands are expected to show a reduction in the amount of phosphorus and other pollutants that currently enter the lake after storm events.

New Point System Developed To Help Assess Nonstructural Measures For Stormwater Management

By SANDRA BLICK, NJDEP Division of Watershed Management

The DEP Division of Watershed Management has developed the New Jersey Nonstructural Stormwater Management Strategies Point System, a computational tool to assess compliance with the nonstructural strategies requirement in the state's Stormwater Management Rule.

The Rule mandates 80% reduction of post-construction total suspended solids (TSS), requires maintenance of ground water recharge equal to the pre-development condition and reductions in peak stormwater runoff resulting from the 2, 10 and 100-year storms of 50, 75 and 80 percent respectively. Among the more innovative requirements of the rule is a requirement to incorporate nonstructural stormwater management strategies in site design.

The recharge, quality and quantity requirements are all based on achieving an articulated numerical standard. To achieve the standard, nonstructural stormwater management strategies are to be implemented to the maximum extent practicable. This is the preferred means to achieve reliable long-term controls. Nonstructural strategies include the preservation of natural vegetation, minimization of impervious surfaces, minimization of compaction, and the use of natural drainage features. There is no empirical threshold in the regulation that can be used to determine compliance, resulting in inconsistent implementation of nonstructural strategies. The Point System was developed to provide more consistent evaluation and compliance.

The Point System is a spreadsheet that computes a pre-development nonstructural score for a proposed development site based on existing soil and vegetation types. The spreadsheet then computes a post-development nonstructural score based on the proposed development.

The loss of points in the scoring due to the development of the site then must be offset through the incorporation of nonstructural strategies into the site design. The percentage of points that must be retained is determined by the size of the site and the State Development and Redevelopment Plan State Planning Area where the site is located.

Larger sites have greater opportunity to incorporate nonstructural strategies into site design than smaller sites and thus are held to a higher threshold.

Nonstructural strategies often reduce the intensity of development that can be accommodated onsite. Therefore a smaller percentage of points must be retained in centers, and planning areas 1 (urban) and 2 (suburban) and a higher percentage is required in planning areas 4 (rural) and 5 (environmentally sensitive).

The Point System is intended to be a "pass only" measuring tool such that, projects that achieve passing values using this tool are presumed to have implemented appropriate nonstructural strategies in the project design. Projects that do not achieve passing values will be required to do a rigorous alternatives analysis to demonstrate nonstructural stormwater management techniques have been incorporated into the site design to the maximum extent practicable.

The Point System was sent to the public Stormwater Best Management Practices Manual Technical Committee on January 31, 2006, where it has been tested and calibrated based on site and subdivision plans brought in by the Committee and the DEP. The Point System was subsequently posted on the web at www.njstormwater.org on February 1, 2006. Both the Division of Land Use Regulation and the Division of Watershed Management are currently using this tool in reviewing applications. Also, the DEP will continue to evaluate and adjust the Point System based on additional experience and comments from the public.

The new Stormwater Management Rule became effective on February 2, 2004 and significantly changed the stormwater management requirements for municipalities and NJDEP.

PATHOGEN TMDLS ESTABLISHED

For Coastal Shellfish-Impaired Waterbodies

By FRANK KLAPINSKI, JR., NJDEP Division of Watershed Management

The Division of Watershed Management established 46 Total Maximum Daily Loads for total coliform to address shellfish-impaired waters as follows:

Atlantic Coastal Water Region

- Five in Watershed Management Area 12
- Fourteen in Watershed Management Area 13
- Six in Watershed Management Area 14
- Six in Watershed Management Area 15
- Eight in Watershed Management Area 16

Lower Delaware Water Region

- Seven in Watershed Management Area 17

These TMDLs address impairments of the shell fishing use, indicated by a full or partial restriction on shellfish harvesting, along the New Jersey coast from Raritan Bay around Sandy Hook, down the Atlantic Ocean coast, and around Cape May to the Cohansey River in Delaware Bay.

To assess the cause of impairment, source assessment considered the location relative to pollution source surveys and obtaining local knowledge of sources through stakeholder input. To obtain local knowledge of potential pathogen sources, the DEP conducted three informal outreach sessions in Toms River, Galloway Township, and Port Norris to solicit input from the public for source identification. Some of the potential pathogen sources listed in the TMDLs include: marinas, failing septics/sewer systems, stormwater outfalls, seagull/geese concentrations, pet walking areas, agriculture and other wildlife. These sources and the associated management measure to address the source are articulated in the TMDL Implementation Plan Section in each report.

The TMDLs were proposed as amendments to their respective Water Quality Management Plans on February 21, 2006. A public hearing was held on March 23, 2006 at Ocean County College. The public comment period ended on April 7, 2006. The DEP appreciates all the thoughtful comments that were received and is preparing a response. The response to comments will be incorporated into the Appendix of each of the TMDL Reports before they are submitted to EPA for approval.

Each year, the DEP updates the classification of New Jersey's coastal waters for shellfish harvesting based on analysis of extensive sampling (over 15,000 samples per year) and pollution source surveys. The classifications indicate sanitary coastal water quality and translate this into a waterbody's status with respect to shellfish harvesting.

New Jersey has had a long history of improving the sanitary quality of its coastal waters resulting in steady progress in lifting shellfish harvesting restrictions in coastal waters. For those waterbodies that do not currently meet shellfish unrestricted harvest requirements, the water is considered impaired for the purpose of the Integrated Water Quality Monitoring and Assessment Report. Waters so listed are required to have TMDLs.

For more information contact, the Bureau of Environmental Analysis and Restoration at (609) 633-1441. The documents were prepared by the DWM in coordination with Tetra Tech, Inc. and financial assistance provided by the United States Environmental Protection Agency, Region 2.

What and Why is a TMDL?

TMDLs are the calculated assimilative or carrying capacity of the receiving water taking into consideration point and nonpoint sources of pollution, natural background, and surface water withdrawals. A TMDL identifies all the contributors of the pollutant of concern and sets load reductions needed to meet surface water quality standards.

TMDLs are required, under Section 303(d) of the Federal Clean Water Act, to be developed for waterbodies that cannot meet surface water quality standards after the implementation of technology-based effluent limitations. A TMDL then sets the Waste Load Allocations and Load Allocations for point and nonpoint sources, respectively. For these TMDLs, the DEP assessed the waterbody's load capacity based on attaining ninety percent of the standard for total coliform at the "worst case" station in each waterbody. The TMDL approach included implicit and explicit margins of safety to assure implementation of the load reduction will fully restore shell fishing in the waterbody.

GOVERNOR'S ENVIRONMENTAL EXCELLENCE AWARDS SEEKS NOMINATIONS

The DEP is pleased to announce the application process for the 2006 Governor's Environmental Excellence Awards. As you may have noticed, the awards have been renamed, originally called the New Jersey Environmental Excellence Awards, to reflect Governor Jon S. Corzine's support and interest in this exciting program.

In addition to the DEP, the New Jersey Corporation for Advanced Technology and the State League of Municipalities are co-sponsors of this program.

The awards include nine categories: Clean Air, Clean and Plentiful Water, Healthy Ecosystems, Innovative Technology, Land Conservation, Safe and Healthy Communities, Environmental Education/Student Led Project, Environmental Stewardship and Environmental Leadership. Applicants will be judged on documented environmental benefit, meeting environmental needs, leadership and innovation, coverage and replicability and education and outreach.

In order to download an awards application or to learn more about the awards program including past winners and project descriptions, please visit the awards website at www.nj.gov/dep/eeawards/

Winners of the 2006 Governor's Environmental Excellence Awards will be invited to an awards ceremony and press event hosted by the Governor in the fall.

The deadline for application submittal is September 22, 2006.

UNION COUNTY COMPLETES WARINANCO PARK LAKE RESTORATION

By BETTY ANN KELLY, Union County Department of Parks

The Union County Board of Chosen Freeholders has completed the pollution reduction and shoreline restoration project at Warinanco Park Lake in Roselle.

The $99,000 Urban Restoration Project is funded in part by a nonpoint source pollution reduction grant from the DEP Bureau of Watershed Planning. Making urban areas a priority for water quality protection is an important part of the Bureau of Watershed Planning's work.

Warinanco Park, designed by noted landscape architect firm, The Olmsted Firm, is a heavily used urban park featuring an 8-acre lake that suffered severe shoreline erosion and runoff pollution. The restoration project recreated the border of boulders (more than 57 tons of boulders were used to reinforce the banks) around the lake and added more than 15,000 plants to the shoreline to stabilize bank erosion and improve water quality by providing filtration of pollution. Native plants will buffer pollutants that might otherwise enter the lake via stormwater.

Staff from the Union County Department of Parks, Recreation and Facilities went to great lengths to keep the planting true to the historical design of the lake. The new plants were carefully placed to provide aesthetic as well as environmental value featuring flowering plants that will attract birds and butterflies and the larger leafed aquatic plants that will provide much needed cover for fish and amphibians.

Before any of the native plants – including irises, sedges, bull rushes, marsh marigolds and lizard tail – could be put in the ground, a great deal of preparation was necessary. Union County staff placed the boulders around the lake, graded and spread topsoil and installed special erosion-control logs made of coconut fiber. Finally, a goose netting was installed in the lake around the shoreline to protect the new plantings from nibbling ducks and geese. Fencing on land was installed to keep the public from accidentally trampling the vegetation.

While much of the shoreline will be planted, areas of access for fishing and other recreational activities will be kept open. New signs were installed explaining the goals of the planting and restoration in general to educate the public about the project.

The planting was done with help from individual volunteers, the DEP Watershed Ambassadors Program, Boy Scouts and Girl Scouts, Union County Master Gardeners, U.S. Department of Agriculture staff, Union County staff and others.

For more information about volunteering in Union County Parks, contact Betty Ann Kelly at (908) 527-4231. For information about other Urban Restoration Projects in the state, contact Terri Romagna, Supervisor, at (609) 633-7022.

AMERICORPS NJ WATERSHED AMBASSADORS PROGRAM
SPEARHEAD STEWARDSHIP PROGRAMS

Over the past six years, the AmeriCorps New Jersey Watershed Ambassadors Program has worked to nurture community-based environmental activities and empower residents of the state to make responsible and informed decisions regarding their watershed.

"The ambassadors have made a difference in their local watershed management areas while focusing on community outreach, watershed stewardship and watershed assessment," said Larry Baier, DEP Division of Watershed Management Director.

Each year, the members are required to form a partnership between at least two local entities within each Watershed Management Area. The focus of these partnerships are events such as stream and beach clean-ups, storm drain markings, tree plantings, water festivals and other water quality enhancement projects. Over the past six years, the watershed ambassadors have formed over 120 partnership events, many of which are sustaining.

"They took on very creative projects while bringing together different entities and volunteers to work towards the betterment of their local environment," said Michelle Ruggiero, Program Manager for the Watershed Ambassadors.

Throughout this past program year, the watershed ambassadors all completed one or more watershed stewardship projects. The following projects are examples of specific projects completed by watershed ambassadors throughout the sixth program year (2005-2006). For more information on the AmeriCorps New Jersey Watershed Ambassadors Program, contact Michelle Ruggiero at (609) 292-2113.

WMA 1: Washington Township Storm Drains

Watershed Ambassador Douglas Jay coordinated a storm drain marking and stream clean-up partnership event in Washington Township, Warren County. The first "leg" of the partnership was the Pohatcong Creek Watershed Association's annual stream clean-up on Pohatcong Creek and tributaries. The partners involved were the Warren Hills High School SAVE club (Students Against Vandalizing the Earth), the Pohatcong Creek Watershed Association, and the Washington Township Department of Public Works. The storm drain markings took place the weekend of May 6 with an extra session held with local 4th graders at Meadow Breeze Park on May 9 as part of the Brass Castle Water Festival.

WMA 1: Ashley Cove Buffer Planting

On May 19, Watershed Ambassador Douglas Jay, members of the Jefferson Township Department of Public Works, the Lake Hopatcong Commission (LHC), and eager volunteers all pitched in to help restore the shorelines of Ashley Cove on Lake Hopatcong. Ashley Cove houses the LHC's weed harvesters and had been notorious for filling up with sediment and weeds. The township, along with the LHC and North Jersey Resource Conservation and Development Council, helped plant over sixty native trees and shrubs along the cove as to enhance the riparian buffer; thereby preventing pollutants and sediment from reaching the cove. Maintenance of the site, such as mulching, watering, deer sheltering, will be completed by volunteers by Jefferson Township Environmental Commission and Open Space Advisory Board, as well as local girl scouts. The planting was a huge success and will hopefully be enjoyed by many future generations visiting New Jersey's largest freshwater lake.

(continue to page 8 for more partnership projects)

WMA 3: Recycling Campaign

Watershed Ambassador Candice Stockdale coordinated a Community Education and Letter-Writing Recycling Campaign for her partnership project. It was aimed at convincing businesses to switch their product packaging from the more harmful and less recyclable upper-level plastics (#3-7) to plastics #1 and #2. Currently, Ringwood's recycling contractor picks up only plastic containers in category #1 (plastic gallon milk jugs) and #2 (clear hard plastic) since there is little to no market for #3-7. The entire Ryerson Middle School's 6th grade of over 150 students was involved in this project with the help of teacher Peggy Richko. The lesson plans enriched their science, writing and civics curricula by encouraging a letter-writing campaign to major food manufacturers asking them to stop packaging their products in non-recyclable plastic containers. "Although my project is still in its first year and it's too soon to measure success by corporate change, community and school feedback is overwhelmingly positive," said Stockdale.

photo taken by Jerry Willis

WMA 4: Passaic Paddle Relay and Watershed Festival

On Saturday, May 20, Watershed Ambassador Gina Mongiello coordinated an assemblage of partners that came together to celebrate the 2nd Annual Passaic Paddle Relay and Watershed Festival at Riverbank Park in Newark. The partners were the Lower Passaic and Saddle River Alliance, the Passaic Valley Sewerage Commissioners, the Ironbound Community Corporation, the Friends of Riverbank Park - SPARK, the Essex County Environmental Center, the Passaic River Institute, the Turtleback Zoo, and many more! The event was a huge success generating community stewardship, environmental education and outdoor recreation for all.

Many dedicated people joined spirits on this day to highlight the Passaic River Watershed. The canoe/kayak race was filled with sport and leisure enthusiasts while the festival lent itself to many families and young children. The festival offered live music, face painting, animals, a beekeeper with live bees, information tables and four Watershed Ambassadors facilitating activities on environmental awareness and understanding. "It was truly an inspiration to have so many caring and interested people join together in support of a very urban and often polluted stretch of the Passaic River," said Mongiello.

WMA 5: Watershed Wide Clean-up and Recreation Day

Watershed Ambassador Elyse Levy worked to coordinate the Watershed Wide Clean-up and Recreation Day, held on May 13 at Johnson Park in Hackensack, to highlight how outdoor recreation impacts the environment. Eleven groups, including Hackensack Riverkeeper and Hackensack Clean Communities, as well as individual volunteers, joined in clean-ups in 5 different locations throughout the Hackensack River Watershed. Volunteers used canoes on the river to scout out trash and people also spread along the banks of the Hackensack and its tributaries to clean up. The 150 volunteers filled two industrial size dumpsters with trash. Following the morning clean-up, the volunteers gathered together in the park for a ceremonial planting of a red maple tree in honor of Captain Bill Sheehan, the Hackensack Riverkeeper, along with proclamation from Mayor Townes of Hackenasack. Prizes were distributed for the most beautiful, most interesting, most patriotic, heaviest, oldest, most ironic garbage, and the most sports balls found during the clean-up. Then the NJ Tae Kwon Do for Youth Foundation explained about nonpoint source pollution and broke boards with negative pollution messages. Then the games began, with 3 legged races, potato sack races, tug-o-war and finished with a few innings of kick ball. Watershed Wide Clean-up and Recreation Day was a fun day of stewardship and play on the banks of the Hackensack.

WMA 13: Beach Clean-up

On April 29, 2006, through the efforts of Watershed Ambassador Allison Seavers,the boardwalk of Point Pleasant Beach was filled with eager volunteers to clean up our beaches. At 9 am, Girl Scouts from Troop 175 grabbed some garbage bags and went right to work. They picked up a lot of debris including plastic bottles, aluminum cans, straws, cigarette butts, a metal crab cage, and more. Not only were our beautiful beaches cleaned but also it was a great way for local entities to combine efforts. Seavers, the Beach Captain for this site and the Barnegat Bay Watershed Ambassador said, "It was great to see so many people care about the quality of our beaches and want to keep them clean. Everyone made a wonderful difference in our community today."

WMA 17: Natural Lands Clean-up

On April 29, 2006, Watershed Ambassador Russ Bohl brought together the Salem County Clean Communities Program, the New Jersey Natural Lands Trust, and hunters and citizens of Perkintown. These partners collaborated to organize and execute a clean-up event in the Game Branch Preserve, which is owned and managed by the NJ Natural Lands Trust. The site that was cleaned is wooded and the municipality donated a front end loader to the volunteers in order to haul the garbage from the woods out to a dumpster. The litter collected included tires, toilets, car parts, boat parts, and standard trash items, like bottles and cans. The goal of the project was to clean up this protected preserve in order to enhance the beauty for public users as well as habitat for the wildlife that inhabits the preserve.

(continue to page 10 for more partnership projects)

WMA 19: Rancocas Watershed Festival

The Rancocas Conservancy celebrated its 15th Anniversary by hosting the first-ever Rancocas Watershed Festival on June 3, 2006 at Burlington County College in Pemberton. Festival partners were the Rancocas Watershed Ambassador Sonal Patel, the Pinelands Preservation Alliance, the Volunteer Center of Burlington County and Burlington County Community College. The event consisted of workshops for homeowners and teachers, booths by local organizations that have worked to protect and enhance the watershed, environmentally conscious arts and crafts, and music by Watershed Ambassador Doug Jay. The Rancocas Conservancy also hosted its 15th Annual Meeting where it honored five municipalities and the Burlington County Freeholders who have collectively preserved well over four thousand acres of land within their towns.

WMA 18: Tree Planting

For her partnership, Watershed Ambassador Stacy Shaw coordinated a tree planting at Newton Creek Park in Haddon Township, Camden County. On Saturday, April 29, neighborhood residents came out to celebrate Arbor Day and plant about 100 Green Ash and Willow Oak saplings along Newton Lake. Partners for the event included the New Jersey Tree Foundation, the Township of Haddon Improvement Project and Camden County Parks. The tree planting was needed at the park for many reasons. Prior to the planting, one entire side of Newton Lake had no shade and experienced a fish kill a few years ago due to low oxygen. Some old trees line the street at the park, but only a handful of younger trees exist as future replacements. "People can always be found using the park, I wanted them to realize it can be fun and rewarding to improve their environment and beautify their town. The day went well, and everyone worked hard and felt pride in improving the park," said Shaw.

WMA 20: Stream Monitoring

Watershed Ambassador Muriel Kiernan brought together the Bordentown City Environmental Commission (BCEC) and the Bordentown Boy Scout Troop #13 for a Stream Monitoring Day in Bordentown City. The BCEC had recently purchased chemical stream monitoring equipment and were interested in being trained in stream monitoring techniques as well as obtaining volunteers that would be willing to annually assess the local streams throughout Bordentown City. On the morning of Saturday, March 11, Kiernan trained BCEC members as well as Bordentown Boy Scout Troop #13 in biological, visual and chemical monitoring techniques. In the afternoon, they used these biological, visual and chemical protocols in order to perform stream assessments on Thorntown Creek, Blacks Creek and Love Bridge Run in Bordentown City.

NORTH JERSEY RC&D BUFFERS NORTHERN WATERWAYS

By GRACE MESSINGER, North Jersey RC&D

Continuing its long history of riparian restoration projects, the North Jersey Resource Conservation and Development Council (RC&D) completed nine riparian restoration projects, buffering 7,460 linear feet equaling 15.5 acres during the 2006 spring planting season. 1,506 trees and 1,100 shrubs were planted with the assistance from 160 volunteers.

"While park-like open fields reaching shorelines may look appealing, these settings are actually ecologically unsound," explains RC&D Coordinator Christine Hall. "Trees and other plantings stabilize soil by slowing down erosion, reducing downstream flooding and creating hospitable habitats for wildlife. Stream-side buffers help maintain fish-friendly water temperatures in the river, provide habitat and food for aquatic life, and protect the watershed, keeping it healthy for wildlife and people."

The 2006 restoration season began in April celebrating Earth Day at the Pequest Wildlife Management Area in White Township, Warren County. Approximately 500 feet of riparian buffer were planted along the Pequest River, a popular trout-fishing stream. The project revitalized a 3.5 acre site managed by DEP Division of Fish and Wildlife.

Students from Belvidere High School and volunteers from the White Twp. Environmental Commission joined staff from RC&D and the Division of Fish and Wildlife. The NJ Department of Corrections provided an additional labor force throughout the week. Natural Resources Conservation Services provided technical assistance in the planning stages. Ariusz Kornacki, an Environmental Analyst who volunteers with NRCS through their Earth Team program, designed the planting for the riparian site. A path to the Pequest River will be maintained so anglers can have continued access to the stream.

The planting season concluded with a unique restoration in Phillipsburg, Warren County, where a portion of a 19th century dam was successfully removed. Part of the Morris Canal, the dam was partially removed allowing the creek to flow freely while maintaining historical elements of the site. This was the only dam on the Lopatcong Creek. Its removal opened up a 10-mile stream channel allowing migratory fish to reach their native spawning ground. Migratory fish are expected to return to the creek next year improving and increasing their population. The RC&D teamed up with nine funding partners to make this restoration a reality.

"Projects such as this revitalize interest in local rivers and can lead to additional restoration projects. Once the blockage was removed, native vegetation was planted along the banks of the creek to help restore it to its natural condition," Hall said.

In addition to providing funding and a labor force for buffer installations, RC&D maintains a website located at www.northjerseyrcd.org/Riparian_Buffer_Site/index.htm and distributes information about the value of riparian forest buffers.

Over the past ten years, the RC&D has completed 23 riparian buffer restoration projects in northwestern New Jersey including Hunterdon, Morris, Sussex and Warren Counties. A major funding source for the RC&D riparian restoration program is the US Environmental Protection Agency Nonpoint Source Pollution 319(h) Grant Program, which is administered by the DEP Division of Watershed Management.

The RC&D serves and is sponsored by the Freeholders and Soil Conservation Districts of Hunterdon, Morris, Somerset, Sussex, Warren and Union Counties. Through partnerships with municipal, state and federal agencies, as well as many private entities, the Council develops and manages programs and projects that promote the improvement and wise use of the region's human and natural resources.

2006 TMDL TEAM RECEIVES STATE TEAMWORK/PARTNERSHIP ACHIEVEMENT AWARD

The New Jersey State Public Service awarded the DEP Division of Watershed Management's Total Maximum Daily Load Team with a Teamwork/Partnership Award in a ceremony this spring. Awards were given to over 1300 individuals at the statewide ceremony.

The TMDL Team is part of the Division's Bureau of Environmental Analysis and Restoration. The team is responsible for evaluating each of the waterbodies in the State that are listed as impaired, which means they fail to meet surface water quality standards for one or more pollutants or fail to achieve a designated use, such as the ability to be used for drinking water supply, swimming or to support healthy aquatic life.

Based on the evaluation and applying various modeling tools available, the team must determine how much of a contaminant, known as the Total Maximum Daily Load (TMDL), can be assimilated in a surface water body while still attaining standards and uses. By identifying the relative contribution of various sources of a pollutant throughout the watershed, the team can then calculate how much each source must be reduced and what management measures, such as permit modifications, riparian restoration projects or local ordinances, are needed to accomplish the goal.

Since its inception in 2002, the team has consistently met goals for establishing TMDLs, establishing over 300 to date, thereby setting the stage for water quality improvement throughout the State.

The following personnel were recognized for their hard work, dedication and professionalism: Barbara Hirst, Bureau Chief; Kimberly Cenno, Team Leader; Marzooq Alebus, Team Leader; Jason Allen, Theresa Bottini, Karen Dorris, Ariane Giudicelli, Mira Gorska, Trish Ingelido, Frank Klapinski, Todd Kratzer, Leslie McDonough, Donna Milligan, Hui Pang, and Anne Witt.

WATERSHED WATCH'S DANIELLE DONKERSLOOT RECEIVES STATE COMMUNITY SERVICE AWARD

In recognition of her tireless and dedicated efforts to build the Watershed Watch Network, Danielle Donkersloot was recognized at the New Jersey State Public Service Awards Ceremony. Donkersloot, an Environmental Specialist in the DEP Division of Watershed Management, develops and coordinates New Jersey's Volunteer Monitoring Program, the Watershed Watch Network.

The Watershed Watch Network is an umbrella for all of the volunteer monitoring programs conducted by a host of agencies and nonprofits across the state. Volunteer monitoring is important to the maintenance and restoration of water quality because it promotes stewardship and environmental education among volunteers who are sampling streams and lakes in their communities. When trained, these groups augment the DEP's water quality monitoring network by submitting data from additional locations at minimal or no cost to the DEP.

Donkersloot has spent many weekend and evening hours helping these groups to get organized and trained. Her efforts with the Watershed Watch Network were also recognized by the U.S. Environmental Protection Agency in 2005 with the Environmental Quality Award. Through her limitless energy and enthusiasm, Danielle has leveraged her limited after work hours into thousands of hours of volunteer monitoring efforts.

MONITORING SUMMIT TO HOST NATIONALLY RENOWN VOLUNTEER MONITOR ADVOCATES

ELEANOR ELY AND ROBERT CARLSON

By DANIELLE DONKERSLOOT, NJDEP Division of Watershed Management

The DEP in partnership with the Watershed Watch Network is pleased to announce two of our national volunteer monitoring partners, Eleanor Ely and Robert Carlson, will present at this year's Volunteer Monitoring Summit on November 2 and 3, 2006.

For sixteen years, Eleanor Ely has been the editor and driving force behind *The Volunteer Monitor*, the national newsletter for those who train and oversee the huge population of citizen volunteers across the country. Volunteer program coordinators all over the U.S. and in many other countries rely on the newsletter for technical advice on monitoring, sustaining programs, training volunteers, and many other topics. In fact, this U.S. Environmental Protection Agency newsletter is the critical link connecting thousands of diverse members of the volunteer monitoring community. Ely's persistence, patience and unique editorial insight ensure that her publication is timely and timeless, an invaluable resource for the entire monitoring community, from volunteer to professional.

Robert Carlson, a professor at Kent State University, has been developing a trophic state classification of lakes and reservoirs. He believes the concept and application of trophic state can be an invaluable tool to scientist and manager alike, and can serve a means of communication of condition. Carlson is also interested in the development of an all-volunteer international water quality monitoring network.

In the Great North American Secchi Dip-In, volunteer monitors take Secchi disk transparency readings in their lakes, reservoirs, rivers, and estuaries during a two-week period in June and July. The results are used to develop maps of transparency and to detect changes in water quality. The Dip-In demonstrates that volunteers can collect environmentally important information over very large geographical scales.

Carlson also uses the volunteer-collected data, such as that from the Secchi Dip-In, to do regional water quality trend analysis. His goal is to construct geographically sensitive predictive models for lakes and reservoirs.

The Fourth Annual Volunteer Monitoring Summit will be held on Thursday, November 2 and Friday, November 3 at Monmouth University. This year's theme is converting data into information to initiate local changes.

More information on the Fourth Annual Volunteer Summit will be posted as it becomes available on the Division of Watershed Management website at www.nj.gov/dep/watershedmgt

save the date • save the date • save the date

NEW JERSEY CLEAN WATER COUNCIL'S

ANNUAL PUBLIC HEARING

Tuesday, October 10, 2006
9:00 a.m. - Noon
Public Hearing Room at the DEP Building in Trenton

This year's topic: How can DEP improve the rules regulating Water Quality Management Plans (WQMPs) and Wastewater Management Plans (WMPs)?

WATER STEWARDS BRAVED RAINY WEATHER AT THE ANNUAL SPRING BIOLOGICAL MONITORING TRAINING WORKSHOP

By NICOLE RAHMAN,
South Branch Watershed Association

Participants Rena Katz, Kevin Berry, Sande Katz and trainer Bill Rawlyk learning how to kick for macroinvertebrates.

On a rainy Sunday in June, water monitoring volunteers braved the elements at South Branch Watershed Association's 13th Annual River Monitoring Workshop. Held on June 3 at Echo Hill Park in Clinton Township, the workshop trained both new volunteers who were interested in monitoring the health of the river and also provided a refresher course for the Association's current river monitors.

Twenty-eight people participated in the workshop and received "hands-on" training from environmental scientists on sampling protocols and other techniques used to gather information and assess impacts on the river.

Trainers helped guide participants through a visual survey of a river site and through collection and identification of benthic macroinvertebrates. These organisms are the "critters" that live in the river, and include aquatic insects, worms and clams. Macroinvertebrates are excellent indicators of water quality. Many of these critters are very sensitive to pollution. Others are more tolerant. The numbers and ratios of organisms in a collected sample are used to determine the condition of the river. Trends in river conditions are revealed when current samples are compared to data from prior years.

The river monitoring program relies on volunteers to sample the South Branch Raritan River and its tributaries at 18 sites throughout the watershed every year during the last two full weeks in June. Through the program, citizens have the opportunity to take part in a scientific study to assess the condition of natural resources in their community and the greater South Branch Raritan River watershed.

Data collected through this program augments data collected by the state and other entities and is used to identify existing and potential sources of pollution in the watershed. The data also assists state and local organizations in making informed decisions regarding the preservation of our water resources. A comprehensive report on trends in the water quality of the South Branch River watershed, based on the Association's data, is underway by a U.S. Environmental Protection Agency contractor, with the completion expected around December 2006.

Please contact Nicole Rahman, Program Director, at (908) 782-0422 ext. 14 for more information about this program.

Trainer Bill Rawlyk discussing the finer points of a dragonfly nymph with workshop participants.

OVER 700 STUDENTS VISITED SOUTH BRANCH RARITAN RIVER THIS SPRING

By NICOLE RAHMAN, South Branch Watershed Association

This spring, 745 students in 34 classes from 8 schools participated in the South Branch Watershed Association's Waterways Stewardship Project. Prior to visiting the river, Association educators first visited the students in their classrooms. Here the students learned about watersheds through slides and a hands-on experience with "Foil Mountain." Then they took a tour underground to learn about the local drinking water through the "groundwater model." Last, they prepared for their trip to the river by learning about activities they would complete during a visual survey of their river site, as well as how to identify the macroinvertebrates (small critters that live on the river bottom) that they would be collecting in the river.

Once at the river for the second part of the program, the students completed a visual survey of the area noting things such as weather, water temperature, nearby land uses, width, depth and velocity. Then they used a large kick net and small hand nets, and looked under rocks to collect macroinvertebrates. In all cases, after identifying the macroinvertebrates collected using their findings to complete a few calculations, the river water had either good or excellent water quality.

Overall, the students had a great time and learned a lot about the water quality in their communities. The participating schools included: Holland Brook Elementary, High Bridge Elementary, Clinton Public Elementary, Delaware Township Middle, Califon Elementary, Hampton Middle, Old Turnpike Middle and Patrick McGaheran Elementary.

If part of all of your municipality or township is in the South Branch Raritan River Watershed and your local school is not listed, please contact an administrator or teacher there and let them know that this excellent hands-on, place-based, curriculum standards-based environmental education program exists in their community, and encourage them to participate this coming fall or next spring.

Home school, scout, church and other groups are welcome too! Please call Nicole Rahman, Program Director, at (908) 782-0422 ext. 14 for more information or to schedule a program.

PHOTOS *- Top left:* Clinton Public School students using teamwork to collect macroinvertebrates with a large kick net in the South Branch of the Raritan River. *Top right:* Delaware Township Middle School student testing her well in the groundwater model with the help of SBWA educator Barbara Rennie. *Middle:* Holland Brook Elementary School students identifying macroinvertebrates. *Bottom:* Patrick McGaheran Elementary School student measuring the depth of Prescott Brook at their field site in Echo Hill Park.

TWO VOLUNTEER MONITORING
TRAINING OPPORTUNITIES

The Watershed Watch Network is offering two small group workshops this fall. This is part of its continuing mission to provide high quality training opportunities for New Jersey's water monitoring community. For more information, contact Danielle Donkersloot, Watershed Watch Network Coordinator, at (609) 292-2113.

Rapid Bioassessment Methodology Training

October 18 & 19, 2006

U.S. Environmental Protection Agency and the Watershed Watch Network will be hosting this 3rd annual Rapid Bioassessment Methodology Training.

Study Design Workshop

December 1 & 2, 2006

The Study Design Workshop will be useful to groups that have never created a study design or groups that would like to revise their existing study designs. The workshop will be held at the Montclair State University's School of Conservation in Branchville. Cabins and meals will be provided for both days.

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